

# Pediatric Disaster, Strategies to Meet the New NOFO Requirements

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2023 ALL-GRANTEE MEETING

CULTIVATING COMMUNITY GROWING COLLABORATION

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# Speaker Disclosure

Sarita Chung, MD

- I have no financial interests or relationships to disclose.

Brent Kaziny, MD

- I have no financial interests or relationships to disclose.

Ben Palmere

- I have no financial interests or relationships to disclose.



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# Objectives

1. *Understand the new disaster performance measures*
2. *Review the Massachusetts case study*
3. *Identify 1- 2 strategies for incorporating the new pediatric disaster requirements*



***Understand the new disaster performance measures.***



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# Fall Pediatric Surge of 2022

- How prepared were you for the “*Tripledemic*” surge of pediatric patients?
- What strategies did you develop?
- What challenges remain?



Connecticut Children's



cbc.ca



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# Background

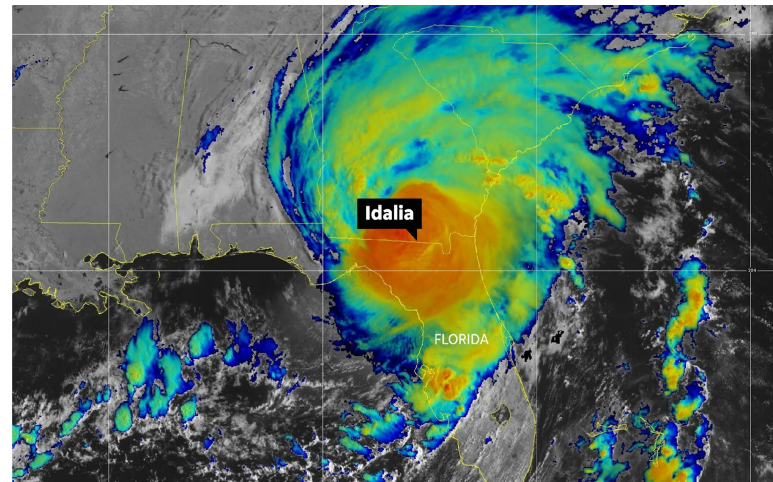


- Pediatric inpatient capacity is limited
  - Nationally from 2008-2018, pediatric inpatient units decreased by 19.1% and pediatric inpatient unit beds decreased by 11.8%
  - Increase distance to pediatric intensive care units for children in rural areas
  - Specialties concentrated in urban centers
- **Federal guidelines**
  - Recommends: Increasing hospital beds by 20% in surge situations
  - 2019: Required the incorporation of pediatric specific surge capacity planning to regional plans

Cushing AM, Bucholz EM, Chien AT, et al. Availability of Pediatric Inpatient Services in the United States. *Pediatrics* 148(1).  
Horak R V., Griffin JF, Brown AM, et al. Growth and Changing Characteristics of Pediatric Intensive Care 2001-2016. *Crit Care Med*;47(8):1135-42  
Li J, Baker AL, D'Ambrosi G, et al. A Statewide Assessment of Pediatric Emergency Care Surge Capabilities. *Pediatrics*. 2023 Apr 1;151(4):e2022059459.



# Frequency of Disasters



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# Pediatric Considerations in Disaster Plans


## Kids are not “little adults”



Because they **breathe in more air for their size** than adults, children **absorb harmful materials from the air** more readily.




Because they **need vaccines, medicines, and specially designed equipment for emergency situations** that are **different from adults**.




**Children are more vulnerable in emergencies**

Because they **spend more time outside, are lower to the ground, and they put their hands in their mouths** more often than do adults.



Because they **may not be able to communicate their symptoms or feelings**.



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# Hospitals

**Table 2: National EMSC Performance Measures by Program Objectives**

National EMSC Performance Measure	Measure	National Baseline	National Target	Data Source	Data Collection Frequency*	Assessment and Survey Time Frame
<b>Program Objective 1: By 2027, expand the uptake of pediatric readiness in EDs</b>						
<b>1.1</b> Hospital Emergency Department Pediatric Readiness Recognition Program (EMSC 04)	States/jurisdictions have a standardized pediatric readiness recognition program for EDs	2020: 29% (n = 17/58)	59%	Grantee Performance Report	Annual	N/A
<b>1.2</b> Hospital Emergency Department Pediatric Emergency Care Coordinator	Hospital EDs have a designated pediatric emergency care coordinator	2021: 46% (n = 1666/3645)	75%	National Pediatric Readiness Assessment	Every 5 Years (2026)**	3-4 months
<b>1.3</b> Hospital Emergency Department Weigh and Record Children's Weight in Kilograms	Hospital EDs weigh and record children's weight in kilograms	2021: 74% (n = 2716/3645)	84%	National Pediatric Readiness Assessment	Every 5 Years (2026)**	3-4 months
<b>1.4</b> Hospital Emergency Department Disaster Plan	Hospital EDs have disaster plans that address the needs of children	2021: 47% (n = 1724/3639)	75%	National Pediatric Readiness Assessment	Every 5 Years (2026)**	3-4 months



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# EMS

2.4 Prehospital Emergency Medical Services Disaster Plan	Prehospital EMS agencies have disaster plans that address the needs of children	0%	75%	National Prehospital Pediatric Readiness Assessment	Every 5 Years (2024)**	3-4 months
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# Performance Measure

**75% of EMS agencies to report that they have disaster plans by 2027 that include:**

- Disaster triage systems that include pediatric considerations
- Participation in regional and local exercises that include children
- Integration with regional and hospital disaster plans
- Considerations for pediatric decontamination
- Patient tracking that includes pediatric considerations

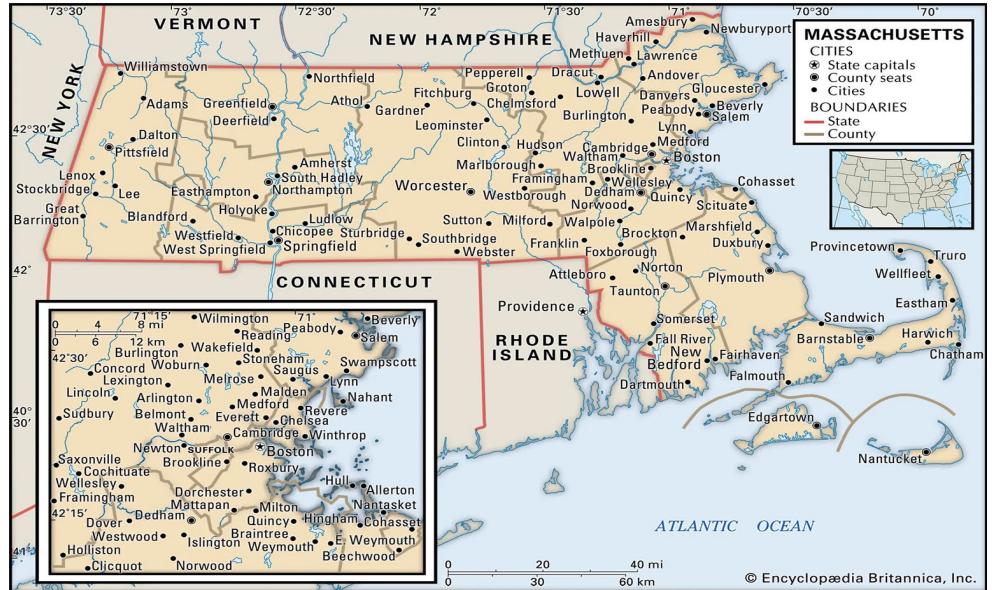


***Review the Massachusetts case study.***



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# Case Study: Massachusetts



What are the current pediatric capacity and capability in MA?  
What, if any, pediatric surge planning is in place?



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# Method

- **Pediatric capacity and capability during standard operations**
  - Staff (including subspecialty)
  - Clinical Services: ECMO, HFOV, Mechanical Ventilation, HFNC, Continuous nebulizers, dialysis
- **Pediatric surge capacity and capability**
  - Presence of 24/7 Transfer Center
  - Additional pediatric surge beds planning
  - Ability to transition adult beds to pediatric beds
  - Ability to transition clinical service for pediatrics
  - Subspecialty staff ability to care for children
  - Pediatric disaster planning (surge and family reunification)

## MA Hospital Pediatric Capabilities & Surge Capacity Survey

### Inpatient Pediatrics

For this **Inpatient Pediatrics** section, please **exclude newborn/neonatal** services.

#### Pediatrics ▾

Does your hospital have a pediatric non-ICU inpatient unit?\*

(e.g., Medical/Surgical)



Yes



No

How many non-ICU pediatric patients (<18yo) does your disaster/surge plan specify can be admitted beyond your licensed inpatient non-ICU capacity?\*

We realize the actual number would be based on census and staffing. We are interested if your plan predesignates a number of additional beds



Plan Does Not Specify



[Click Here to Enter a Number](#)

Does your hospital have a dedicated Pediatric ICU?\*



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# Results

- 90.6% survey response rate (58/64)

Characteristic	n (%)
<b>Role of Survey Respondent<sup>1</sup></b>	45 (77.6)
-Emergency Management	33 (56.9)
-Nurse Leadership	24 (41.4)
-Hospital Administration	16 (27.6)
-MD/DO Physician Leadership	4 (6.9)
-Other	
<b>Hospital Characteristics</b>	
Hospitals with 24/7 Transfer Center	28 (48.3)
<b>Annual Pediatric Volume</b>	
-Low	12 (21.4)
-Medium	16 (28.6)
-Medium-High	16 (28.6)
-High	12 (21.4)
<b>Trauma Designation</b>	
-Hospitals with no trauma designation	43 (74.1)
-Hospitals with trauma designation	
--Adult Only	
--Level 90.6% survey response rate (58/64)	3 (5.2)
1	1 (1.7)
--Level 1	5 (8.6)
--Level 2	0 (0.0)
--Level 3	
--Level 4	3 (5.2)
--Adult & Pediatric	2 (3.5)
--Adult Level 1/Pediatric Level 1	0 (0.0)
--Adult Level 1/Pediatric Level 2	
--Adult Level 2/Pediatric Level 2	1 (1.7)
--Pediatric Only	0 (0.0)
--Level 1	
--Level 2	

<sup>1</sup>Responses not mutually exclusive, N is greater than the number of hospitals

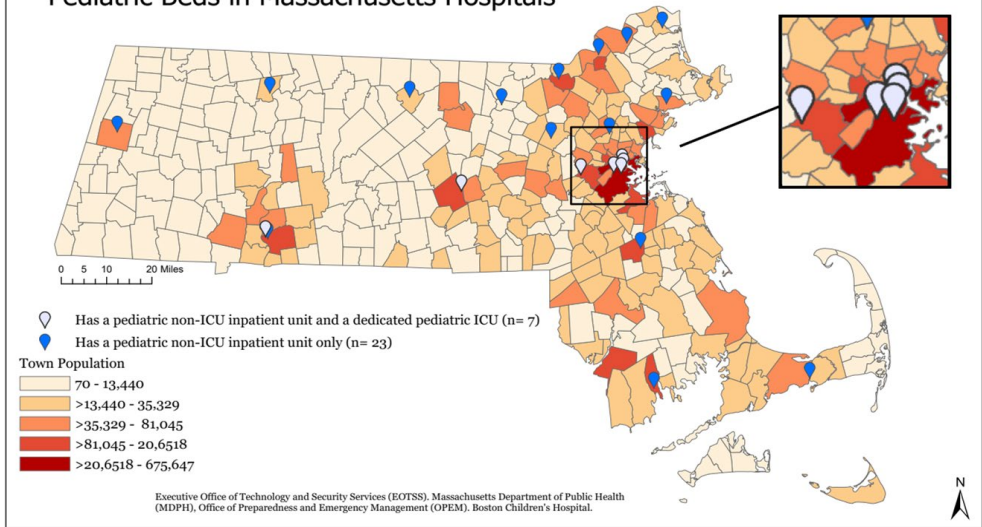




## Statewide Pediatric Inpatient Bed Capacity and Capability During Normal Operations and Disaster Surge Situations

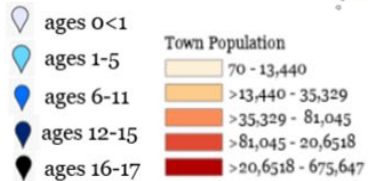
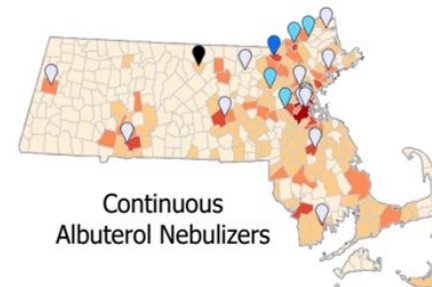
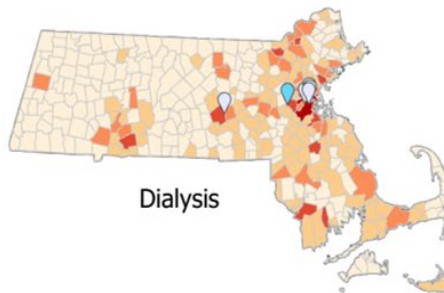
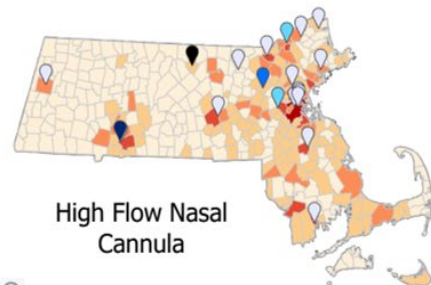
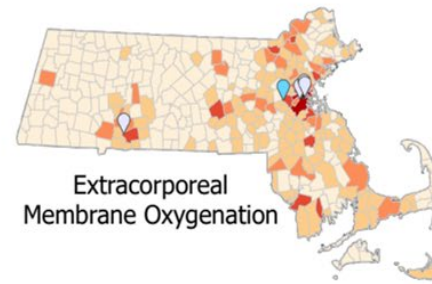
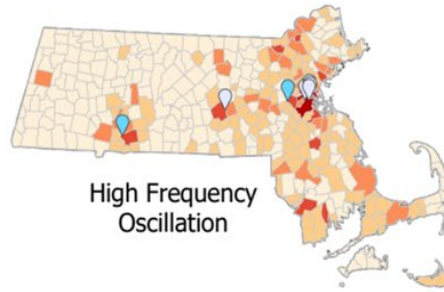
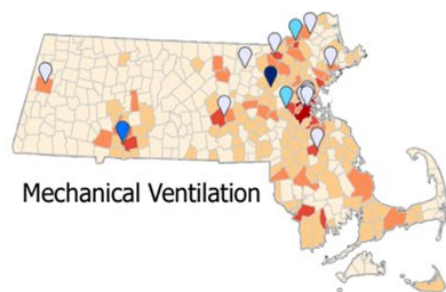
	Normal Operating Procedures	Additional Pediatric Beds During Disaster Surge Situations <sup>1</sup>	Total Possib Capacity
Pediatric Non-ICU <sup>1</sup>	836	101	937
Pediatric ICU	112	33	145
Neonatal Non-ICU	937	24	961
Neonatal ICU	254	13	267
Total (% of total licensed beds in Massachusetts)	2,159 (18.5%)	171 (1.5%)	2,310 (19.8%)

### Pediatric Beds in Massachusetts Hospitals



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# Youngest Age Range for Pediatric Therapy Administration during Normal Operations

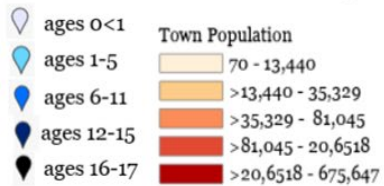
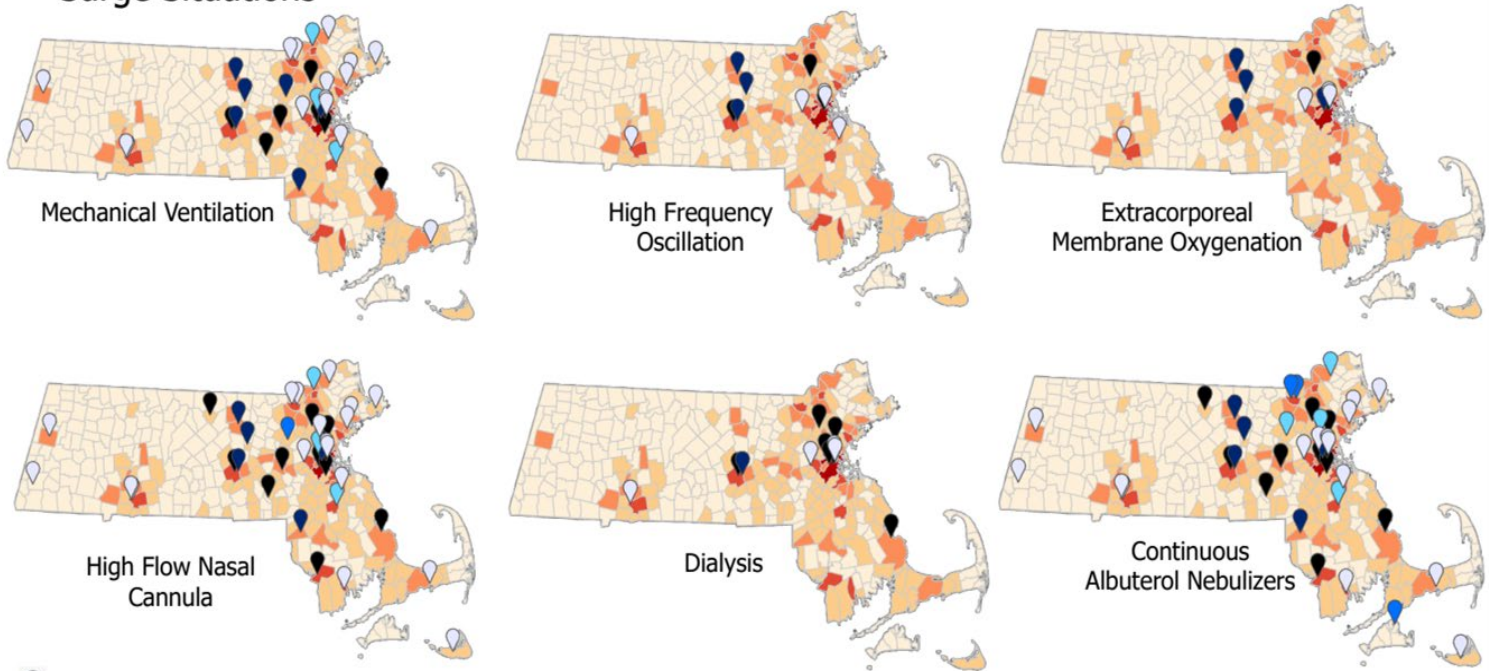


Massachusetts Department of Public Health (MDPH), Office of Preparedness and Emergency Management (OPEM).  
Boston Children's Hospital.



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# Youngest Age Range for Pediatric Therapy Administration from Adult Hospitals during Surge Situations



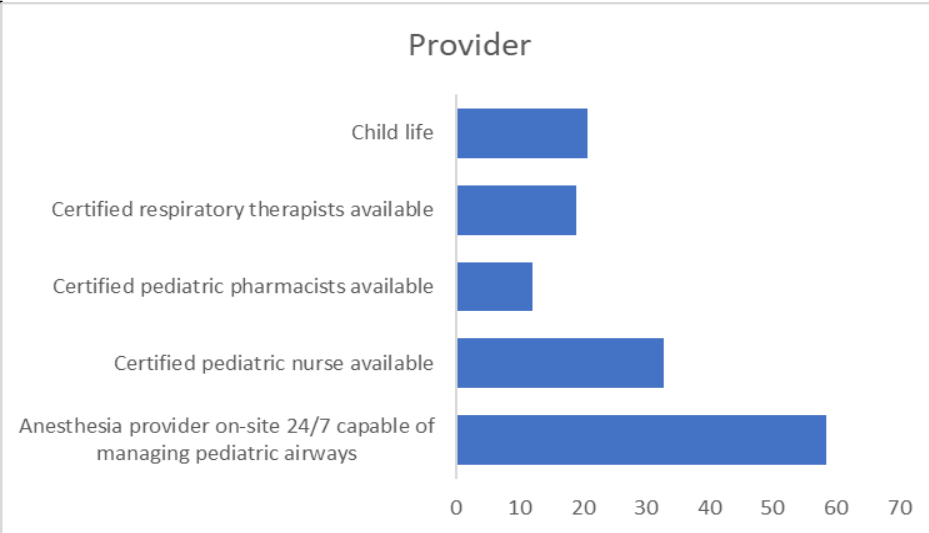
Massachusetts Department of Public Health (MDPH), Office of Preparedness and Emergency Management (OPEM). Boston Children's Hospital.



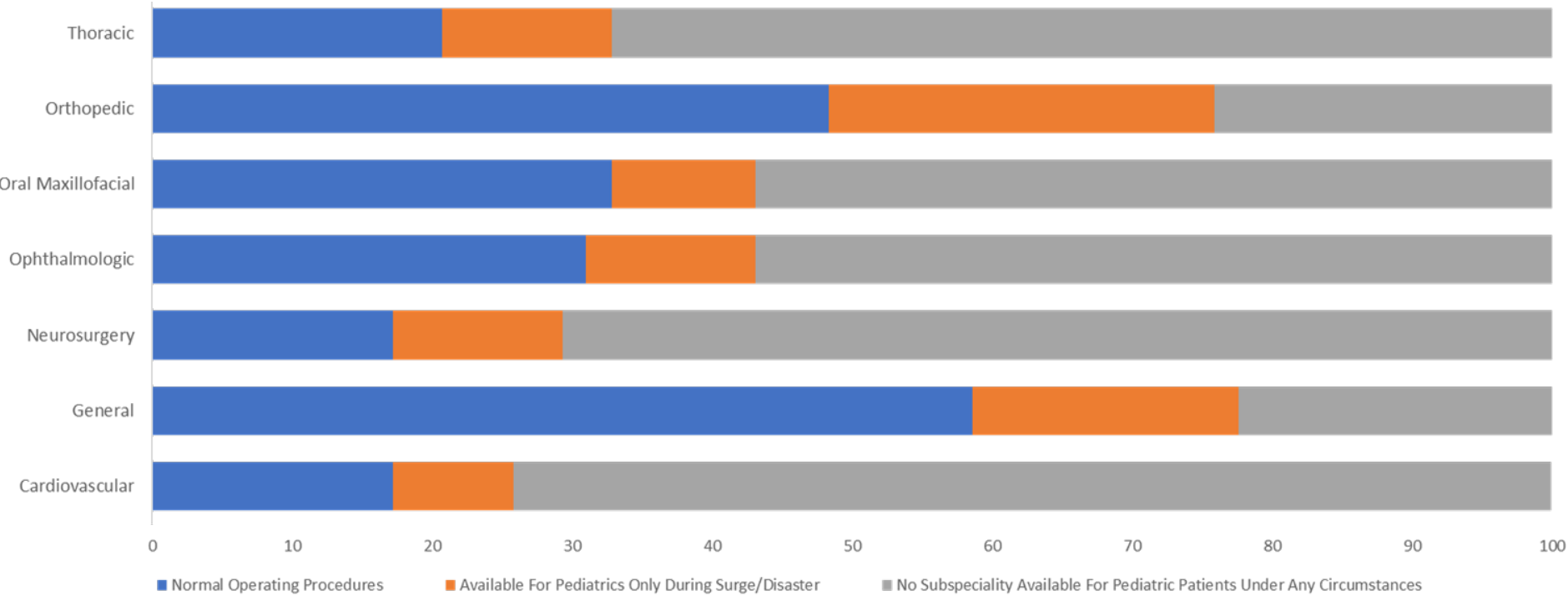
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# Staff- Normal Operations

Type of provider managing pediatrics (multichoice)	N (% Respondents that selected)
i. Emergency Medicine	57 (98.28%)
ii. Family Medicine	18 (31.03%)
iii. General Pediatrician	22 (37.93%)
iv. Nurse Practitioner	30 (51.72%)
v. Pediatric Emergency Medicine	13 (22.41%)
vi. Pediatric Hospitalist	20 (34.48%)
vii. Pediatric Intensivist	6 (10.34%)
Pediatric Sub-Specialist	7 (12.07%)
i. Physician Assistant	26 (27.59%)
ii. Other (explain)	9 (15.52%)

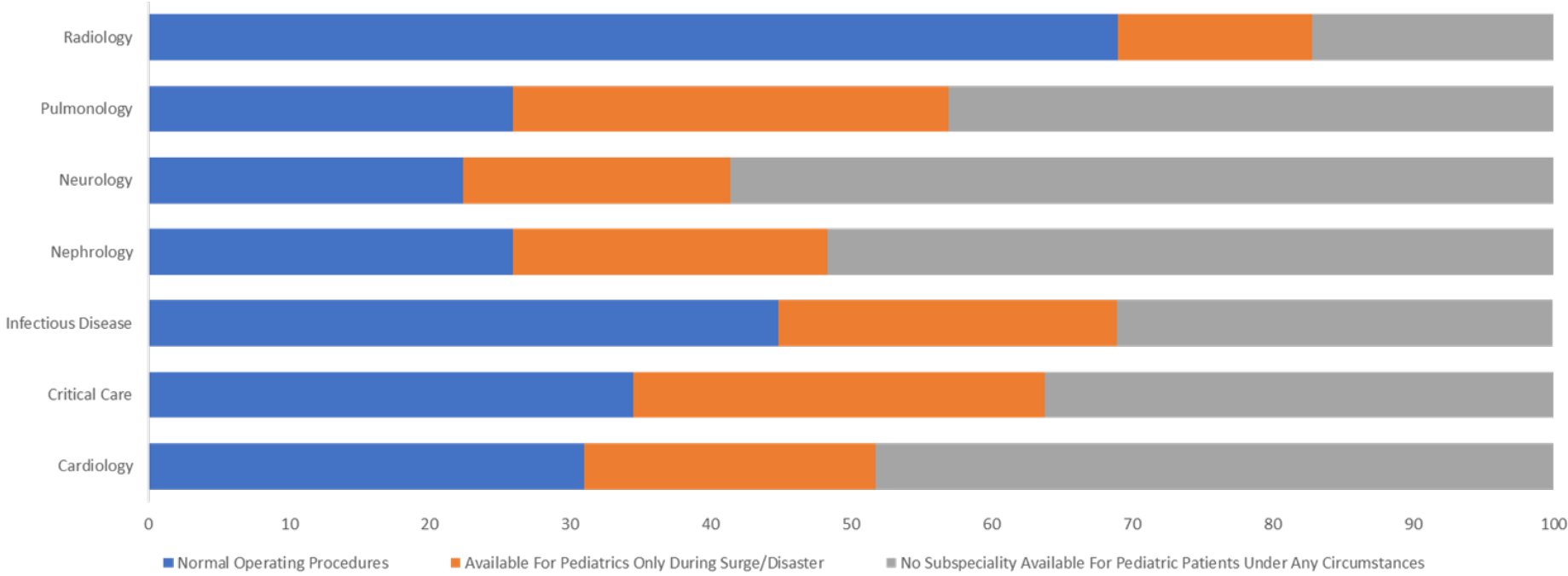


# Staff- Surgical Subspecialty



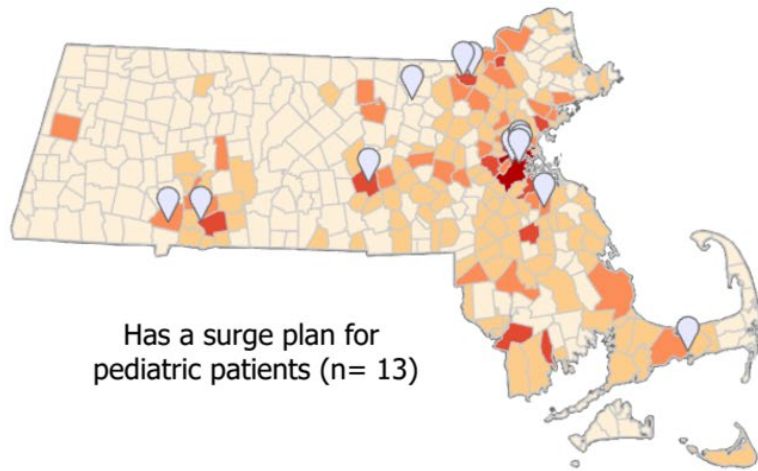
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# Staff- Medical Subspecialty



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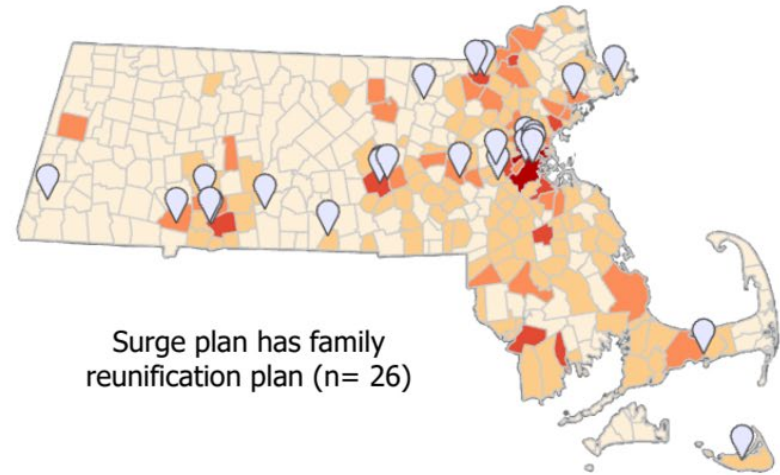
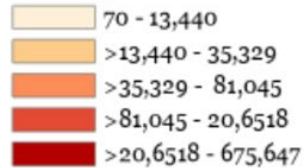
# Distribution of Pediatric Disaster Policies



Has a surge plan for pediatric patients (n= 13)

 Yes

Town Population



Surge plan has family reunification plan (n= 26)

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# Limitations

- Snapshot in 2021 – more limited pediatric capacity and capabilities in 2022
- Only focused on staff, space and structure not stuff (equipment)
- Does not take into account if there is a pediatric and adult surge simultaneously
- Only one state (MA) – may limit generalizability





# Conclusions for MA

- Limited MA pediatric surge inpatient capacity – would not meet ASPR benchmark of 20% additional beds
- During normal operations and pediatric surge, hospitals can provide respiratory therapies
- Majority of hospitals lack subspecialty care- most services are clustered in high population areas
- Limited pediatric surge planning



# Next Steps

Hospital	High Frequency Ventilatory Youngest Age	Mechanical Ventilation (yes/no)	Mechanical Ventilation on Youngest Age	High Flow Nasal Cannula (yes/no)	High Flow Nasal Cannula Youngest Age	Continuous Albuterol Nebulizers (yes/no)	Continuous Albuterol Nebulizers Youngest Age	Hemodialysis (yes/no)	Hemodialysis Youngest Age	Peritoneal Dialysis (yes/no)	Peritoneal Dialysis Youngest Age	Adult Facilities that can admit Pediatric patients	Admit pediatric patients to Adult Med/Surgical Beds	Admit Pediatric patients in Adult ICU Beds	Total Adult License of Medical Surgical Beds	Total License of Adult ICU Beds	Licensed Pediatric Facilities	Peds Med/Surgical Beds	PICU Beds	Well Baby Beds	Special Care/NI CU	Pediatric Staffing	In-house pediatric airway provider	Certified Pediatric Nurses	Certified Pediatric Pharmacists	Certified Pediatric Respiratory	Child Life	Specialists will see Pediatric Patients
ANNA ATHOLATE FRANK			yes	0_<1yo	yes	0_<1yo						Yes	Yes	63	8		8	0	11	0		Yes						
BAYSTATE	1_5yo	yes	6_11yo	yes	12_15yo								Yes	Yes	44	6		3	0	18	0		Yes					
NOBLE														50	0		0	0	0	0								
WING														40	0		0	0	0	0								
HIRE MED		yes	0_<1yo	yes	0_<1yo	yes	0_<1yo					Yes		139	22		16	0	16	0			Yes					
ISRAEL DEACN												Yes		51	7		0	0	0	0								
ISRAEL DEACO												Yes	Yes	94	4		0	0	0	0			Yes					
ISRAEL DEACO												Yes	Yes	120	0		0	0	13	0		Yes						
BETH LY HOSPI														517	69		0	0	64	62		Yes						
BEVER		yes	0_<1yo	yes	0_<1yo	yes	0_<1yo							0	14		11	0	28	12		Yes	Yes					
BOSTON MED	0_<1yo	yes	0_<1yo	yes	0_<1yo	yes	0_<1yo	yes	0_<1yo	yes	0_<1yo			0	0		272	66	0	24		Yes	Yes	Yes	Yes	Yes	Yes	
CTR AM & WOMEN	0_<1yo	yes	0_<1yo	yes	0_<1yo	yes	0_<1yo	yes	0_<1yo	yes	0_<1yo		Yes		435	71		22	4	15	21		Yes		Yes	Yes	Yes	
BRIGHT COAST HOSPI												Yes	Yes	133	14		0	0	0	0								
CARNE CHA														614	81		0	0	64	66		Yes						
EVERETT														197	11		4	0	10	0								
DICKINSON														83	19		7	0	0	0								
DANA ORN HOSPI		yes	12_15yo	yes	6_11yo	yes	1_5yo					Yes	Yes	75	8		45	0	15	0		Yes	Yes					
EWING HOSPI														108	10		0	0	0	0						Yes		
Y														88	11		3	0	11	0		Yes						
DANA ORN HOSPI																							Yes	Yes	Yes	Yes	Yes	
EWING HOSPI		yes	12_15yo	yes	6_11yo	yes	1_5yo					Yes	Yes	70	7		11	0	24	5		Yes				Yes		
EWING HOSPI												Yes	Yes	14	5		2	0	4	0								



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***Identify 1- 2 strategies for incorporating the new pediatric disaster requirements.***



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# Disaster Checklist

## Checklist of Essential Pediatric Domains and Considerations for Every Hospital's Disaster Policies (Pilot)

*This draft document is being pilot-tested to identify clarifications or additions. Questions and feedback are appreciated; please email [djaster@emscimprovement.center](mailto:djaster@emscimprovement.center). The final checklist is anticipated for release in winter 2022.*

### DOMAIN 1: PEDIATRIC DISASTER CARE COORDINATION

A pediatric disaster champion is a designated staff member(s) who champions high-quality pediatric disaster care and response. Establishing this position is a crucial first step in improving and strengthening an institution's pediatric disaster capabilities.

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
<b>Identify Key Staff</b>	<ul style="list-style-type: none"> <li>Identify a staff member to champion pediatric disaster care. This person may serve in the role of the pediatric emergency care coordinator (PECC), also known as a pediatric champion.</li> </ul>	<ul style="list-style-type: none"> <li>Designate a staff member to serve as the Pediatric Disaster Care Coordinator.</li> <li>Staff member(s) have training in disaster response/emergency management or are willing to learn about disaster response/emergency management.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and engage other hospital professionals who can provide specific expertise and advocate for the integration of the needs of children in planning and implementing pediatric disaster response (emergency management, neurosurgeon, trauma surgeon, infectious disease/infection control, emergency medicine physicians).</li> </ul>
<b>Designate Responsibilities of Key Staff</b>	<ul style="list-style-type: none"> <li>Staff members are identified and supported by hospital administration with a formal position or designation.</li> <li>Staff members have official roles and designations on hospital committees (e.g., medical, trauma, emergency management, etc.) to serve as liaison for pediatric patients.</li> </ul>	<ul style="list-style-type: none"> <li>Coordinate department- and hospital-wide pediatric-inclusive disaster drills.</li> <li>Facilitate disaster-related learning activities (e.g., FEMA, ICS courses, lectures, table-top activities) that include pediatric considerations and priorities for all staff.</li> </ul>	<ul style="list-style-type: none"> <li>Collaborate with hospital emergency management and engage in developing and reviewing hospital disaster policies, ensuring that pediatric needs are addressed.</li> <li>Staff members serve as a liaison to EMS agencies and facilitate disaster-related learning that includes pediatric considerations.</li> <li>Staff members promote pediatric disaster awareness within the community.</li> </ul>

## 11 Domains

### FOUNDATION

Facilities with no dedicated pediatric inpatient services.



### INTERMEDIATE

Facilities with some inpatient pediatric services.



### ADVANCED

Quaternary-care or specialty pediatric hospitals.



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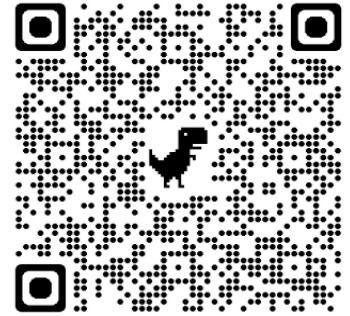
# Webinar Series

**Understanding and Implementing  
the Pediatric Disaster  
Preparedness Checklist**

*Domain 3: Pediatric Surge Capacity*

*Domain 6: Patient Tracking and  
Family Reunification*

*Domain 9: Children and Youth with  
Special Health Care Needs*



Webinar series



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# PECC Disaster Playbook



**COMING SOON**



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# Promoting Pediatrics at a State Level

**Urge leaders to add Pediatric Considerations to State MCI plan**

## **Participating in existing partnerships**

- Healthcare coalitions
- Partnering with the AAP chapter and other pediatric advocates

## **Utilize existing resources**

- Who is already conducting exercises? Are they including children?



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# Family Reunification



Family Reunification Toolkit

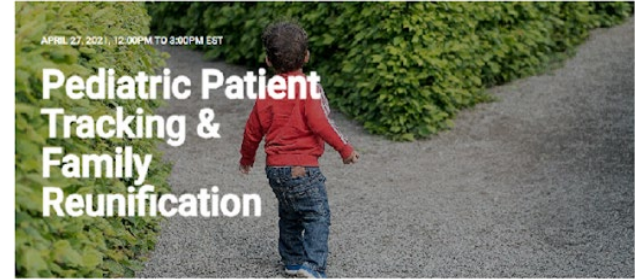


Texas Children's Hospital

Family Reception Center Plan



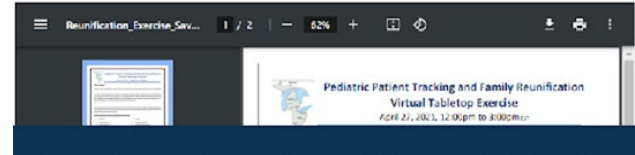
Family Reception Center Plan



Exercise Slides (.pptx)

## Exercise Agenda

[Click to download a copy of the agenda \(PDF\)](#)



<https://emscimprovement.center/domains/preparedness/asprcoe/eglpcdr/exercises/reunification/>



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# Drills and Exercises

## Disaster Preparedness: Pediatric Tabletop Exercise Resource Kit

[Home](#) / [Patient Care](#) / [Disasters and Children](#) / Disaster Preparedness: Pediatric Tabletop Exercise Resource Kit

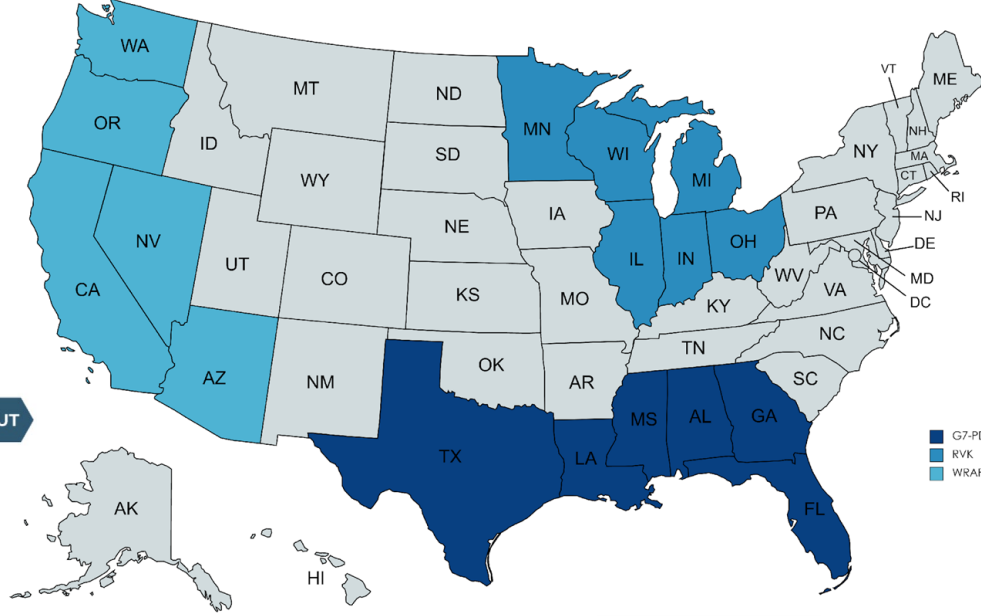


The Pediatric Tabletop Exercise Resource Kit provides step by step guidance to prepare for and implement a pediatric tabletop exercise in a community. Templates are provided for agendas, email invitations, and follow-up work. Additional resources to prepare pediatric practice settings for disasters and public health emergencies are also included in the links below.



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# ASPR Pediatric Disaster COEs



- G7-PDN
- RVK
- WRAP-EM



**WRAP-EM**

Western Regional Alliance for Pediatric Emergency Management

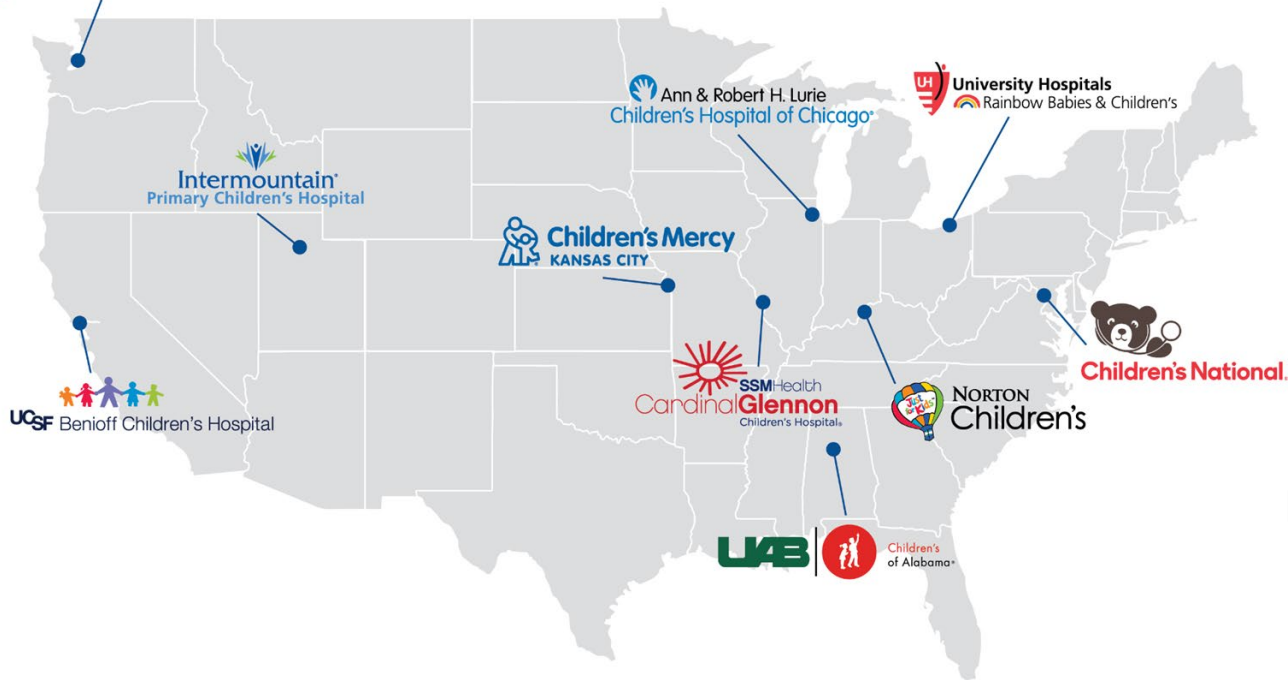


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# Pediatric Pandemic Network



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**HOT OFF THE PRESS**

## WRAP-EM PEDIATRIC SURGE PLAYBOOK

This playbook is designed to provide considerations, potential response strategies, and supporting resources for the most common major challenges experienced by healthcare organizations and interagency groups during pediatric surge. In particular, it takes a “just in time” and “how-to” approach in its formatting and organizational design to allow for quick reference and use during pediatric surge incidents.

### Playbook Audience

Individuals and organizations engaged in the management of pediatric surge within the context of healthcare facilities, systems, and interagency efforts. This has been divided into three broad subgroups for the playbook (see other sections below). In particular, the target audience within those organizations is those who will be responsible for managing aspects of the pediatric surge including healthcare staff, administrators/leadership, logistics personnel, and emergency managers. This intended audience includes both pediatric and non-pediatric systems.

### Response Ready for Any Community

This playbook has been designed to be applicable regardless of the available resources, interagency coordination capabilities, level of response readiness, and environment of the local community. While not every response consideration, strategy, and resource will be useful for every incident and community, the content of the playbook has been deliberately developed to be as widely applicable to communities and institutions across the United States.



# Questions?

- Contact EIIIC Disaster Domain: [disaster@emscimprovement.center](mailto:disaster@emscimprovement.center)



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